

CLAIMS:

1. A panel or object panel construction including an inner support frame means and an outer skin at least partially enclosing said support frame means formed at least in part by at least one layer, of at least one flexible web wound
5 about said support frame means at least partially overlapping a previously positioned said flexible web whereby at least some overlapping regions of a said web or webs are adhered to each other.
2. A panel or object construction according to claim 1 wherein a plurality of said layers are provided whereby at least some of said layers are adhered to at
10 least one other said layer.
3. A panel or object construction according to claim 2 wherein the outer skin retains flexibility after being applied to said support frame means and also provides some tension or pressure on the support frame means.
4. A panel or object construction according to any one of claims 1 to 3
15 wherein said support frame means is a single frame element.
5. A panel or object construction according to any one of claims 1 to 3 wherein said support frame means includes at least two frame elements, the or each said frame element being spaced apart and wound by said flexible web or webs such that the flexible web or webs between adjacent frame elements forms
20 a hinge means.
6. A panel or object construction according to claim 4 wherein said single frame element includes at least two parts interconnected by hinge means.
7. A panel or object construction according to any one of claims 1 to 6 wherein the inner support frame means is fully enclosed by said outer skin.

8. A panel or object construction according to claim 7 wherein the flexible web or webs are wound in at least two directions disposed at a different angles relative to each other, preferably at substantially 90°.

9. A panel or object construction according to any one of claims 1 to 8
5 wherein the or each said flexible web is a flexible plastics film web.

10. A panel or object construction according to claim 9 wherein the or each said flexible plastics film web is a pre-stretched plastics film beyond its yield point to increase its length and decrease its thickness, the film retaining some memory.

11. A panel or object construction according to claim 10 wherein the object or
10 panel construction is passed through or by heating means to heat shrink the flexible plastics film onto said support frame means.

12. A panel or object construction according to any one of claims 9 or 10 wherein air is trapped and retained within said outer skin.

13. A panel or object construction according to any one of claims 9 to 12
15 wherein said outer skin is perforated at one or more locations.

14. A panel or object construction according to any one of claims 9 to 13 wherein air zones are trapped between said layers of said flexible plastics film.

15. A panel or object construction according to any one of claims 9 to 14 wherein the flexible plastics film web or webs include self adherent
20 characteristics, or a separate adhesive or adhesive layer is used to adhere the layers of the flexible web or webs together.

16. A panel or object construction according to any one of claims 1 to 3 or any of claims 7, 9 or 10 when appended directly to one of claims 1, 2 or 3 wherein the support frame means includes a perimeter substantially rigid frame formation
25 defining a substantially open space inwardly of said perimeter rigid frame formation.

17. A panel or object construction according to claim 16 wherein the perimeter rigid frame formation includes a portion with an outer edge zone adapted to form at least one bevelled edge region when the outer skin of said plastics film web or webs has been wound thereon.

5 18. A panel or object construction according to claim 17 wherein the bevelled edge region or regions extends fully around the perimeter rigid frame formation.

19. A panel or object construction according to claim 16 wherein the perimeter rigid frame formation includes a portion with an outer edge zone adapted to form a convex curve when the outer skin of said web or webs has been wound
10 thereon.

20. A panel or object construction according to claim 16 wherein the perimeter rigid frame formation includes a portion with an outer edge zone adapted to form a square or rectangular edge form when the outer skin of said web or webs has been wound thereon.

15 21. A panel or object construction according to any one of claims 1 to 3 or any of claims 7, 9 or 10 when appended to any one of claims 1, 2 or 3 wherein a printed sheet is sandwiched between inner layer or layers and an outer layer or layers of said outer skin, at least the outer layer or layers being transparent whereby said printed sheet is viewable.

20 22. A panel construction according to any one of claims 1 to 3 or any of claims 7, 9 or 10 when appended to any one of claims 1, 2 or 3 wherein a plastics foam material is located within the outer skin.

23. A panel construction according to any one of claims 1 to 3 or any of claims 7, 9 or 10 when appended to any one of claims 1, 2 or 3 wherein a rigid or semi-
25 rigid panel is located either within the outer skin, between layers of the outer skin, or outwardly of the outer skin.

24. A graphics display panel including a rigid inner support frame means and an outer skin enclosing said support frame means formed at least in part by at least one layer of at least one flexible plastics film web wound about said support frame means at least partially overlapping a previously positioned said flexible plastics film web whereby at least some overlapping regions of a said flexible plastics film web or webs are adhered to each other, and graphics indicia being carried on an outer surface of said outer skin.

25. A graphics display panel according to claim 24 wherein the graphics indicia are printed or adhesive formed directly on said outer surface of said outer skin.

26. A graphics display panel according to claim 24 wherein the graphics indicia are printed or otherwise formed on a separate sheet adhered to said outer surface of said outer skin.

27. An evaporation restrictor panel including a rigid inner support frame means and an outer skin enclosing said support frame means formed at least in part by at least one layer of at least one flexible plastics film web wound about said support frame means at least partially overlapping a previously positioned said flexible plastics film web whereby at least some overlapping regions of a said flexible plastics film web or webs are adhered to each other.

28. A desalination apparatus including a rigid inner support frame means and an outer skin enclosing said support frame means formed at least in part by at least one layer of at least one flexible plastics film web wound about said support frame means at least partially overlapping a previously positioned said flexible plastics film web whereby at least some overlapping regions of a said flexible plastics film web or webs are adhered to each other, said support frame means and said outer skin defining a sealed internal zone having inlet and outlet arrangement means to introduce and remove water to be desalinated to and from said internal zone, said outer skin having at least one upper region upwardly inclined from at least one hollow zone of said support frame means, said support frame means further including water collection and drainage means to collect

pure water condensed on said upwardly inclined region and deliver same to said at least one hollow zone of the support frame means.

29. A container constructed from at least one panel construction according to any one of claims 1 to 23.

5 30. A container according to claim 29 wherein a plurality of said panel constructions are provided connected together via hinge means such that the container can be transported in a substantially flat condition and erected into said container by an end user.

10 31. A container according to claim 30 wherein releasable fastening means is provided to enable said panel constructions intended to form adjacent said side walls to be releasably connected to each other.

32. A container according to any one of claims 29 to 30 wherein at least one of said panel constructions includes a printed sheet outwardly covered and retained by at least one layer of a transparent flexible plastics material web.

15 33. A container according to claim 32 wherein said at least one layer of a transparent plastics material web also forms an overwrap to connect and hold said panel constructions in an erect container configuration.

20 34. A wall construction element including at least one rectangular shaped panel construction according to any one of claims 1 to 23 further including retainer means engaging and retaining at least one opposed edges of said panel construction.

35. A wall construction element according to claim 34 wherein at least three edges of said panel construction are held by said retainer means.

25 36. A container arrangement formed on a pallet base including a plurality of wall construction elements according to claim 34 or 35.

37. A wall construction element including at least one rectangular shaped panel construction according to any one of claims 1 to 23 further including one or more rigid or semi-rigid material sheets connected to the inner support frame means and substantially covering the whole of at least one side face of the panel construction.

38. A panel construction including an inner support frame means and a flexible outer skin at least partially enclosing said support frame means formed at least in part by at least one flexible web wound about said support frame means in at least partially overlapping manner whereby at least some overlapping regions of said web or webs are adhered to each other, said support frame means having two mutually parallel first frame members spaced from one another with each said first frame member having at least one hinge zone such that the hinge zones in the spaced first frame members are arranged in at least one pair with the or each said pair defining a hinging axis about which portions of the first frame members on either side of said hinge zones can be positioned into differing relative dispositions, after having said flexible outer skin applied to said inner support frame means.

39. A panel construction according to claim 38 wherein a second frame member connects and is secured to said first frame members at or adjacent the or each said pair of hinge zones.

40. A panel construction according to claim 39 further including at least one additional said first frame member located intermediate said two mutually parallel and spaced said first frame members, the or each additional said first frame member also including a hinge zone aligned with each said hinging axis.

41. A panel construction according to any one of claims 38 to 40 wherein each said hinge zone maintains the portions of the first frame members on either side of the hinge zone in a fixed relative position until an external force is applied to change the fixed relative position to a new fixed relative position.

42. A panel construction according to claim 41 wherein each said hinge zone includes a crease line or a region of reduced thickness relative to the portions of the first frame members on either side of the hinge zone.

5 43. A panel construction according to any one of claims 38 to 40 wherein each said hinge zone permits substantially free movement of the portions of the first frame members on either side of the hinge zones about said hinging axis or axes at least within a predetermined arc of movement.

10 44. A panel construction according to any one of claims 41, 42 or 43 further including abutment means arranged to limit movement of the portions of the first frame members on either side of the hinge zones about the hinging axis or axes to a predetermined arc of movement.

15 45. A panel construction according to any one of claims 38 to 44 further including an end frame member joining and connected to end portions of the two mutually parallel and spaced said first frame members to form a substantially rectangular said inner support frame means.

46. A panel construction according to claim 45 wherein the outer flexible skin includes at least one first layer of a flexible plastics material film web wound about said end frame members.

20 47. A panel construction according to claim 46 wherein the film web has a width to at least span the distance between said two mutually parallel and spaced first frame members.

25 48. A panel construction according to claim 46 or claim 47 wherein the outer flexible skin further includes at least one second layer of a flexible plastics material film web helically wound in overlapping manner about the two mutually parallel and spaced said first frame members.

49. A panel construction according to claim 48 wherein a said first layer forms an outer surface of said outer flexible skin.

50. A panel construction according to any one of claims 38 to 49 further including pressure equalizing means to ensure pressure within the outer flexible skin is the same as atmospheric pressure.

51. A panel construction according to any one of claims 38 to 50 wherein
5 multiple said hinging axes are provided, all of said hinging axes being mutually parallel to each other.

52. A panel construction according to any one of claims 38 to 51 wherein multiple said hinging axes are provided, some of said hinging axes being disposed perpendicularly to other of said hinging axes.

10 53. A product including a panel construction according to any one of claims 38 to 52 wherein portions of the first frame members are moved about the hinging axes to position free end edges of the panel construction adjacent one another.

54. A flat panel assembly including a plurality of separate substantially rigid perimeter frame formations each defining a substantially open space inwardly of
15 said substantially rigid perimeter frame formation, and an outer envelope formed by at least one layer of a flexible plastics film web material wound about all of said frame formations to at least partially overlap a previously laid length of the flexible plastics film web material with at least some overlapping regions of said web material being adhered to one another.

20 55. A flat panel assembly according to claim 54 wherein each said separate substantially rigid perimeter frame formation is individually wound and at least partially enclosed by at least one layer of at least one flexible plastics film web to form an individual panel whereby at least some overlapping regions of said web or webs are adhered to one another.

25 56. A flat panel assembly according to claim 55 wherein each said separate substantially rigid perimeter frame formation is fully enclosed by said flexible plastics film web.

57. A flat panel assembly according to any one of claims 54 to 56 wherein a first said frame formation is square or rectangular and at least one further said frame formation is positioned with an edge adjacent a respective edge of said first frame formation.

5 58. A flat panel assembly according to any one of claims 54 to 57 wherein said outer envelope is formed by successively winding layers of said plastics film web material in a first direction and thereafter in a second direction disposed at an angle to said first direction.

10 59. A flat panel assembly according to claim 58 wherein said angle is about 90°.

60. A flat panel assembly including a plurality of panel constructions according to claim 1 or claim 7 when appended to claim 1 arranged adjacent each other substantially in a plane, and at least one continuous layer adhered to one side only of said panel constructions.

15 61. A flat panel assembly according to claim 60 wherein said at least one continuous layer is made up of at least two overlapping webs adhered to one another in the overlapping zone.

20 62. A container made from a flat panel assembly according to claim 60 or claim 61 wherein one said panel construction forms a base of the container and the other said panel constructions form side walls of the container, the continuous layer forming a seal between adjacent edges of adjacent side walls and between adjacent edges of the base and the side walls of the container.

25 63. A container made from a flat panel assembly according to any one of claims 54 to 59 wherein one said frame formation forms a base of said container and the other said frame formations form side walls of said container, said outer envelope forming a seal between adjacent edges of adjacent side walls and between adjacent edges of the base and the side walls of the container.

64. Apparatus for wrapping a support frame means with an outer skin formed at least in part by a plurality of layers of a flexible web wound about said support frame means, said apparatus including a first conveying means and a second conveying means, the first and the second conveying means being arranged to
5 move the support frame means to and fro between the first and second conveying means, and a roll of said flexible web disposed between the first and the second conveying means being movable between a relatively elevated position and a relatively lowered position, the flexible web being successively positioned along a first face of the support frame means with the roll of said flexible web in the
10 elevated position as the support frame means moves between the first and the second conveying means, whereupon, the roll of said flexible web moves to the lowered position and the flexible web is positioned along a second face of the support frame means opposite to said first face as the support frame means moves again between the first and the second conveying means.

15 65. Apparatus according to claim 64 wherein at least one of said first or said second conveying means is bodily repositionable about a rotation axis disposed at 90° to the plane of movement of the support frame means between the first and the second conveying means.

20 66. Apparatus according to claim 61 wherein a third conveying means is provided to move the support frame means in a direction 90° to the direction of movement between the first and the second conveying means, the third conveying means being cooperable with the first or the second conveying means that is bodily repositionable about said rotation axis, a second roll of flexible web being mounted for selective movement between elevated and lowered positions
25 and disposed between said third conveying means and the first or the second conveying means that is bodily repositionable about said rotation axis.

67. Apparatus according to claim 64 wherein at least two rolls of a said flexible web is positioned between the first and the second conveying means, each of said rolls being movable between a said elevated position and a said lowered
30 position.

68. Apparatus according to claim 64 wherein the roll is movable in an axial direction as the flexible web is applied to said support frame means.

69. Apparatus for wrapping a support frame means with an outer skin formed at least in part by a plurality of layers of a flexible web wound about said support
5 frame means, said apparatus including a first conveying means and a second conveying means being arranged to move the support frame means between the first and the second conveying means, and at least one roll of flexible web disposed generally between said first and said second conveying means and disposed to orbit about said support frame means as it moves between the first
10 and the second conveying means to lay helical windings of said flexible web onto said support means, said apparatus further including first flexible web application means to apply at least one flexible web length either below or over the helical windings in a longitudinal direction of said support frame means on opposed faces of said support frame means.

15 70. Apparatus according to claim 69 further including second flexible web application means to apply at least one flexible web on the other side of said helical windings to the flexible web applied by said first flexible web application means, the flexible web applied by said second flexible web application means being applied in said longitudinal direction on opposed faces of said support
20 frame means.